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ABSTRACT OF THE DISCLOSURE

A square anti-symmetric uniformly redundant array coded aperture includes transparent and opaque cells and exhibits a normal mask pattern at a first position and a complementary mask pattern when rotated to a second position rotationally offset by 90° from the first position. The coded aperture is utilized in a coded aperture imaging system for imaging a source of non-focusable radiation such as a gamma ray or x-ray emitting source. Such a coded aperture imaging system basically includes a square anti-symmetric uniformly redundant array coded aperture for receiving radiation emitted by a source and generating a first coded shadow therefrom at the first position, and a second coded shadow therefrom at the second position, a rotating platform and motor for rotating the coded aperture between the first and second position, a position sensitive detector situated with respect to the coded aperture to allow the first and second coded shadows to sequentially impinge on the detector, the detector respectively generating a first coded optical signal and a second coded optical signal in response thereto, an optical signal convertor responsive to the first and second coded optical signals and respectively generating a first coded electrical signal and a second coded electrical signal in response thereto and a signal processor responsive to the first and second coded electrical signals and decoding the coded electrical signals to generate an image signal which is representative of an image of the source of non-focusable radiation.